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EXAMINER	
BRAUTIGAM, ALYSA N	
ART UNIT	**PAPER NUMBER**
2676	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/674,363	DIEFENBAUGH ET AL.	
	Examiner	Art Unit	
	Alysa N. Brautigam	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 October 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-72* is/are pending in the application.

4a) Of the above claim(s) *53-72* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-52* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *53-72* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 October 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1-52, drawn to a system, method, apparatus, and computer readable medium for converting color data from a first color space to a second color space as well as converting from the second color space to a third color space, classified in class 345, subclass 600.

   II. Claims 53-72, drawn to a method, apparatus, and computer readable medium for transforming from a first color space to a second color space utilizing look-up tables, classified in class 345, subclass 602.

2. The inventions are distinct, each from the other because:

Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination is drawn to a generic method of color space transformation. The subcombination has separate utility such as a system, method, and apparatus for color space transformation utilizing look-up tables.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

3. During a telephone conversation with Paul Mendonsa (Reg. No. 42,879) on 10 February 2005 a provisional election was made without traverse to prosecute the invention of group I, claims 1-52. Affirmation of this election must be made by applicant in replying to this Office action. Claims 53-72 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Response to Arguments

4. In response to applicant's argument that the combined prior art does not teach or suggest "displaying the adjusted color data to reduce power consumption of the display device," a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Drawings

5. Applicant's amendments, see replacement drawing sheet and pages 2-4, filed 31 October 2005, with respect to the following have been fully considered and are persuasive.

- Figure 2, Item 200 (see paragraph 0012)
- Figure 5: Control
- Figure 5: Display Interrupt
- Figure 5: Enable
- Figure 5: MUX following Gamma Unit and Blender Unit
- Figure 5, Item 555
- Figure 5, Item 510

The objections to the drawings have been withdrawn.

Specification

6. Applicant's amendments, see pages 2-4, filed 31 October 2005, with respect to the following have been fully considered and are persuasive.

Abstract

Paragraph 0004, Line 1

Paragraph 0006, Line 3

Paragraphs 0022-0025:

The objection to the specification has been withdrawn.

Claim Objections

7. Applicant's amendments, see pages 7 and 13, filed 31 October 2005, with respect to claims 11 and 38 have been fully considered and are persuasive. The objection to claims 11 and 38 have been withdrawn.

Claim Rejections - 35 USC § 112

8. Applicant's arguments, see pages 10 and 16, filed 31 October 2005, with respect to the 35 USC § 112, second paragraph rejections of claims 27 and 52 have been fully considered and are persuasive. The 35 USC § 112, second paragraph rejections of claims 27 and 52 have been withdrawn.

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 113, 28, and 40 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In particular, it is unclear how the display of ***any*** color data reduces power consumption of a display device.

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 9 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

13. Claims 9 and 11 recite the limitation "color transformation" in line 1. There is insufficient antecedent basis for this limitation in the claim. In particular, this rejection is maintained because further limitation of "a color transformation" is not possible since the color transformation has not been previously disclosed.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. Claims 1-2, 4-5, 8-14, 16-20, 23-29, 31-32, 35-41, 43-46, and 49-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hino (5,956,015) in view of Wicker et al. (6,441,857).

16. In regards to claim 1, Hino discloses a method comprising:

- converting color data for an image to be displayed from a first color space to a second color space (Figures 8-14 disclose the conversion from RGB to CIE XYZ; col. 7: 62-64);

- modifying, in the second color space, a color intensity for one or more portions of the image (Figures 8-14; col. 8: 10-48);
- converting the modified color data from the second color space to a third color space (Figures 8-14 disclose the conversion from CIE XYZ to RGB; col. 8: 48-51).

While Hino discloses the conversion to the third color space and further suggests the use of gamma transformed values in the third color space (R'G'B'), Hino does not specifically disclose wherein a gamma transformation is applied on the modified color data in the third color space to generate adjusted color data for one or more portions of the image. Wicker discloses a method and apparatus for modifying video data for display on a television and, in the background section, discloses the commonality of applying a gamma transformation on the modified color data in the RGB color space to generate adjusted color data for one or more portions of the image (col. 2: 4-20 and 44-47) and storing the adjusted color data in a frame buffer (col. 2: 4-20). In addition, Wicker discloses wherein the adjusted color data is displayed to reduce power consumption of a display device (col. 2: 4-20). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino and Wicker's disclose of background art to achieve a system and method wherein modifications to the intensity of a pixel are made in an alternate color space in order to improve the efficiency of processing.

17. In regards to claim 2, the combination of Hino and Wicker discloses the method of claim 1, as contained hereinabove. In addition, Hino discloses wherein the color

intensity is modified before the gamma transformation is applied (Hino: Figures 8-14 disclose the intensity adjustment performed in the second color space prior to transformation to the third color space [RGB] which is gamma transformed prior to display).

18. In regards to claim 4, the combination of Hino and Wicker discloses the method of claim 1, as contained hereinabove. In addition, Hino discloses wherein the third color space comprises the color space to be used to display the image (Hino: col. 8: 48-53).

19. In regards to claim 5, the combination of Hino and Wicker disclose the method of claim 1, as contained hereinabove. In addition, Hino discloses wherein the first color space and the third color space are the same color space (Hino: Figures 8-14 disclose the first and third color spaces as RGB).

20. In regards to claim 8, the combination of Hino and Wicker discloses the method of claim 1, as contained hereinabove. In addition, Hino discloses wherein the first color space is chosen from the group of YUV, YCrCb, CIE, HSV, YIQ, CMYK, RBGA, Pantone, Munsell, NCS and the second color space is chosen from the group of YUV, YCrCb, CIE, HSV, YIQ, CMYK, RBGA, Pantone, Munsell, NCS (Figures 8-14 where the first color space is RGB and the second color space is CIE XYZ).

21. In regards to claim 9, the combination of Hino and Wicker discloses the method of claim 1, as contained hereinabove. In addition, Hino discloses wherein applying the color transformation on the color data in the second color space comprises:

- determining an image brightness profile for the image to be displayed (Figure 8 and col. 8: 38-45);

- generating a color transformation in the second color space based on the image brightness profile (Figure 8 and col. 8: 38-50); and
- applying the color transformation to the color data (Figure 8 and col. 8: 18-50).

22. In regards to claim 10, the combination of Hino and Wicker discloses the method of claim 9, as contained hereinabove. In addition, Hino discloses the method further comprising modifying a backlight intensity based on the image brightness profile (col. 6: 47-49).

23. In regards to claim 11, the combination of Hino and Wicker discloses the method of claim 1, as contained hereinabove. In addition, Hino discloses wherein applying the color transformation on the color data in the second color space comprises:

- determining an ambient light level for an environment for a display device (col. 6: 44-46 and 63-66; col. 8: 18-37);
- generating a color transformation in the second color space based on the ambient light level (col. 8: 18-37); and
- applying the color transformation on the color data (col. 8: 18-37).

24. In regards to claim 12, the combination of Hino and Wicker discloses the method of claim 11, as contained hereinabove. In addition, Hino discloses wherein the method further comprises modifying a backlight intensity based on the ambient light level (col. 8: 18-56).

25. In regards to claim 13, Hino discloses an apparatus comprising:

- a first memory to store color data for in image to be displayed, wherein the color data is stored in a first color space (col. 6: 36-39);
- a first conversion agent communicatively coupled with the first memory to receive the color data in the first color space and to convert the color data to a second color space (Figures 8-14 – RGB --> XYZ conversion);
- a color brightness agent communicatively coupled with the first conversion agent to modify color brightness characteristics, using the second color space, of one or more portions of the image to be displayed (Figures 8-14 – Luminance adjustment);
- a second conversion agent communicatively coupled with the color brightness agent to convert the color data from the second color space to a third color space (Figures 8-14 – XYZ --> RGB conversion);
- a display device coupled to the second memory, the display device to display the adjusted color data to reduce power consumption of the display device (Figure 10).

While Hino discloses the conversion and storage of the data and further suggests the use of gamma transformed values in the third color space (R'G'B'), Hino does not specifically disclose wherein a gamma transformation is applied on the modified color data in the third color space to generate adjusted color data for one or more portions of the image and then stored. Wicker discloses a method and apparatus for modifying video data for display on a television and, in the background section, discloses the commonality of applying a gamma transformation on the modified color data in the RGB

color space to generate adjusted color data for one or more portions of the image (col. 2: 4-20 and 44-47) and storing the adjusted color data in a frame buffer (col. 2: 4-20). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino and Wicker's disclose of background art to achieve a system and method wherein modifications to the intensity of a pixel are made in an alternate color space in order to improve the efficiency of processing.

26. In regards to claim 14, the combination of Hino and Wicker discloses the apparatus of claim 13, as contained hereinabove. In addition, Hino discloses wherein the color brightness characteristics are modified before the gamma transformation is applied (Hino: Figures 8-14 disclose the intensity adjustment performed in the second color space prior to transformation to the third color space [RGB] which is gamma transformed prior to display).

27. In regards to claim 16, the combination of Hino and Wicker discloses the apparatus of claim 13, as contained hereinabove. In addition, Hino discloses wherein the third color space is the color space to be used to display the image (Hino: col. 8: 48-53).

28. In regards to claim 17, the combination of Hino and Wicker discloses apparatus of claim 16 further comprising:

- a color control agent communicatively coupled with the second memory to further modify the modified color data in the third color space (Figures 8-14: Luminance Adjustment); and

- a third memory communicatively coupled with the color control agent to store the further modified color data in the third color space (Figures 8-14: Luminance Coefficients Storage).

29. In regards to claim 18, the combination of Hino and Wicker discloses the apparatus of claim 17, as contained hereinabove. In addition, Hino discloses wherein the first memory, the second memory and the third memory comprise a single memory device (col. 6: 36-39).

30. In regards to claim 19, the combination of Hino and Wicker discloses the apparatus of claim 17, as contained hereinabove. In addition, Hino discloses wherein the color control agent comprises a processor executing instructions (col. 6: 36-39).

31. In regards to claim 20, the combination of Hino and Wicker discloses the apparatus of claim 17, as contained hereinabove. In addition, Hino discloses wherein the color control agent uses a color look-up table storing data in the first color space to further modify the color data (col. 1: 38-62 discloses the variety of methods which can be used including color look-up tables).

32. In regards to claim 23, the combination of Hino and Wicker discloses the apparatus of claim 13, as contained hereinabove. In addition, Hino discloses wherein the first color space is chosen from the group of YUV, YCrCb, CIE, HSV, YIQ, CMYK, RBGA; Pantone, Munsell, NCS and the second color space is chosen from the group of YUV, YCrCb, CIE, HSV, YIQ, CMYK, RBGA, Pantone, Munsell, NCS (Figures 8-14 where the first color space is RGB and the second color space is CIE XYZ).

33. In regards to claim 24, the combination of Hino and Wicker discloses the apparatus of claim 13, as contained hereinabove. In addition, Hino discloses wherein the color brightness agent comprises a processor executing instructions (col. 6: 36-38).

34. In regards to claim 25, the combination of Hino and Wicker discloses the apparatus of claim 13, as contained hereinabove. In addition, Hino discloses wherein the color brightness agent uses a color look-up table or gamma transfer function storing data in the second color space to modify the color data (col. 1: 38-62 discloses the variety of methods which can be used including color look-up tables).

35. In regards to claim 26, the combination of Hino and Wicker discloses the apparatus of claim 13, as contained hereinabove. In addition, Hino discloses the apparatus further comprising an ambient light sensor communicatively coupled with the brightness control agent to provide data indicating an ambient light level, wherein the brightness control agent uses the ambient light level to modify the color data (Figures 13 and 14 – Ambient Light; col. 6: 44-46 and 63-66; col. 8: 18-37).

36. In regards to claim 27, the combination of Hino and Wicker discloses the apparatus of claim 13, as contained hereinabove. In addition, Hino discloses wherein the color brightness agent controls a backlight intensity of a display device (col. 6: 47-49).

37. In regards to claim 28, Hino discloses an article comprising a machine-readable medium having stored thereon data representing sets of instructions (col. 6: 36-39) that, when executed by a machine, cause the machine to:

- convert color data for an image to be displayed from a first color space to a second color space (Figures 8-14 disclose the conversion from RGB to CIE XYZ; col. 7: 62-64);
- modifying, in the second color space, a color intensity for one or more portions of the image (Figures 8-14; col. 8: 10-48);
- converting the modified color data from the second color space to a third color space (Figures 8-14 disclose the conversion from CIE XYZ to RGB; col. 8: 48-51);.

While Hino discloses the conversion to the third color space and further suggests the use of gamma transformed values in the third color space (R'G'B'), Hino does not specifically disclose wherein a gamma transformation is applied on the modified color data in the third color space to generate adjusted color data for one or more portions of the image. Wicker discloses a method and apparatus for modifying video data for display on a television and, in the background section, discloses the commonality of applying a gamma transformation on the modified color data in the RGB color space to generate adjusted color data for one or more portions of the image (col. 2: 4-20 and 44-47) and storing the adjusted color data in a frame buffer (col. 2: 4-20). In addition, Wicker discloses wherein the adjusted color data is displayed to reduce power consumption of a display device (col. 2: 4-20). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino and Wicker's disclose of background art to achieve a system and

method wherein modifications to the intensity of a pixel are made in an alternate color space in order to improve the efficiency of processing.

38. In regards to claim 29, the combination of Hino and Wicker discloses the article of claim 28, as contained hereinabove. In addition, Hino discloses wherein the color intensity is modified before the gamma transformation is applied (Hino: Figures 8-14 disclose the intensity adjustment performed in the second color space prior to transformation to the third color space [RGB] which is gamma transformed prior to display).

39. In regards to claim 31, the combination of Hino and Wicker discloses the machine-readable medium of claim 28, as contained hereinabove. In addition, Hino discloses wherein the third color space is the color space to be used to display the image (Hino: col. 8: 48-53).

40. In regards to claim 32, the combination of Hino and Wicker discloses the machine-readable medium of claim 28, as contained hereinabove. In addition, Hino discloses wherein the first color space and the third color space are the same color space (Hino: Figures 8-14; col. 8: 48-53).

41. In regards to claim 35, the combination of Hino and Wicker discloses the machine-readable medium of claim 28, as contained hereinabove. In addition, Hino discloses wherein the first color space is chosen from the group of YUV, YCrCb, CIE, HSV, YIQ, CMYK, RBGA, Pantone, Munsell, NCS and the second color space is chosen from the group of YUV, YCrCb, CIE, HSV, YIQ, CMYK, RBGA, Pantone,

Munsell, NCS (Figures 8-14 where the first color space is RGB and the second color space is CIE XYZ).

42. In regards to claim 36, the combination of Hino and Wicker discloses the machine-readable medium of claim 28, as contained hereinabove. In addition, Hino discloses wherein the instructions that cause the one or more processors to apply the color transformation on the color data in the second color space comprise instructions that, when executed, cause the one or more processors to:

- determine an image brightness profile for the image to be displayed (Figure 8 and col. 8: 38-45);
- generating a color transformation in the second color space based on the image brightness profile (Figure 8 and col. 8: 38-50); and
- applying the color transformation to the color data (Figure 8 and col. 8: 18-50).

43. In regards to claim 37, the combination of Hino and Wicker discloses the machine-readable medium of claim 36, as contained hereinabove. In addition, Hino discloses the machine-readable medium further comprising sets of instructions that, when executed by the machine, cause the one or more processors to modify a backlight intensity based on the image brightness profile (col. 6: 47-49).

44. In regards to claim 38, the combination of Hino and Wicker discloses the machine-readable medium of claim 28 wherein the sets of instructions that cause the one or more processors to apply the color transformation on the color data in the

second color space comprise instructions that, when executed by the machine, cause the machine to:

- determine an ambient light level for an environment for a display device (col. 6: 44-46 and 63-66; col. 8: 18-37);
- generating a color transformation in the second color space based on the ambient light level (col. 8: 18-37); and
- applying the color transformation on the color data (col. 8: 18-37).

45. In regards to claim 39, the combination of Hino and Wicker discloses the machine-readable medium of claim 38, as contained hereinabove. In addition, Hino discloses the article further comprising instructions that, when executed by the machine, further cause the machine to modify a backlight intensity based on the ambient light level (col. 8: 18-56).

46. In regards to claim 40, Hino discloses a system comprising:

- a first memory to store color data for in image to be displayed, wherein the color data is stored in a first color space (col. 6: 36-39);
- a first conversion agent communicatively coupled with the first memory to receive the color data in the first color space and to convert the color data to a second color space (Figures 8-14 – RGB --> XYZ conversion);
- a color brightness agent communicatively coupled with the first conversion agent to modify color brightness characteristics, using the second color space, of one or more portions of the image to be displayed (Figures 8-14 – Luminance adjustment);

- a second conversion agent communicatively coupled with the color brightness agent to convert the color data from the second color space to a third color space (Figures 8-14 – XYZ --> RGB conversion);
- an ambient light sensor communicatively coupled with the first conversion agent (Figure 4, item 46; Figure 9 – Ambient Light Measurement; Figure 13, Ambient Light Parameter; col. 6: 44-46);
- a display device coupled to the second memory, the display device to display the adjusted color data to reduce power consumption of the display device (Figure 10).

While Hino clearly discloses the input and output of data such that the input and output lines are operatively coupled to various components, Hino fails to teach a bus operatively coupled to the individual components. Official Notice is taken that both the concept and the advantages for providing a bus operatively coupled to the components is well known and expected in the art. It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to have included a bus operatively coupled to the various components as these are known to provide improved data transfer within a computing system and thereby speed up processing while reducing space, heat, and cost. While Hino discloses the conversion and storage of the data and further suggests the use of gamma transformed values in the third color space (R'G'B'), Hino does not specifically disclose wherein a gamma transformation is applied on the modified color data in the third color space to generate adjusted color data for one or more portions of the image and then stored. Wicker discloses a method and

apparatus for modifying video data for display on a television and, in the background section, discloses the commonality of applying a gamma transformation on the modified color data in the RGB color space to generate adjusted color data for one or more portions of the image (col. 2: 4-20 and 44-47) and storing the adjusted color data in a frame buffer (col. 2: 4-20). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino and Wicker's disclose of background art to achieve a system and method wherein modifications to the intensity of a pixel are made in an alternate color space in order to improve the efficiency of processing.

47. In regards to claim 41, the combination of Hino and Wicker discloses the system of claim 40, as contained hereinabove. In addition, Hino discloses wherein the color brightness characteristics are modified before the gamma transformation is applied (Hino: Figures 8-14 disclose the intensity adjustment performed in the second color space prior to transformation to the third color space [RGB] which is gamma transformed prior to display).

48. In regards to claim 43, the combination of Hino and Wicker discloses the system of claim 40, as contained hereinabove. In addition, Hino discloses wherein the third color space is the color space to be used to display the image (Hino: col. 8: 48-53).

49. In regards to claim 44, the combination of Hino and Wicker discloses the system of claim 43 further comprising:

- a color control agent communicatively coupled with the second memory to further modify the modified color data in the third color space (Figures 8-14: Luminance Adjustment); and
- a third memory communicatively coupled with the color control agent to store the further modified color data in the third color space (Figures 8-14: Luminance Coefficients Storage).

50. In regards to claim 45, the combination of Hino and Wicker discloses the system of claim 44, as contained hereinabove. In addition, Hino discloses wherein the first memory, the second memory and the third memory comprise a single memory device (col. 6: 36-39).

51. In regards to claim 46, the combination of Hino and Wicker discloses the system of claim 44, as contained hereinabove. In addition, Hino discloses wherein the color control agent uses a color look-up table storing data in the first color space to further modify the color data (col. 1: 38-62 discloses the variety of methods which can be used including color look-up tables).

52. In regards to claim 49, the combination of Hino and Wicker discloses the system of claim 40, as contained hereinabove. In addition, Hino discloses wherein the first color space is chosen from the group of YUV, YCrCb, CIE, HSV, YIQ, CMYK, RBGA, Pantone, Munsell, NCS and the second color space is chosen from the group of YUV, YCrCb, CIE, HSV, YIQ, CMYK, RBGA, Pantone, Munsell, NCS (Figures 8-14 where the first color space is RGB and the second color space is CIE XYZ).

53. In regards to claim 50, the combination of Hino and Wicker discloses the system of claim 40, as contained hereinabove. In addition, Hino discloses wherein the color control agent comprises a processor executing instructions (col. 6: 36-39).

54. In regards to claim 51, the combination of Hino and Wicker discloses the system of claim 40, as contained hereinabove. In addition, Hino discloses wherein the color brightness agent uses a color look-up table or gamma transfer function storing data in the second color space to modify the color data (col. 1: 38-62 discloses the variety of methods which can be used including color look-up tables).

55. In regards to claim 52, the combination of Hino and Wicker discloses the system of claim 40, as contained hereinabove. In addition, Hino discloses wherein the brightness control agent further controls a backlight intensity of a display device (col. 8: 18-56).

56. Claims 3, 6-7, 15, 21-22, 30, 33-34, 42, and 47-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hino (5,956,015) in view of Wicker et al. (6,441,857) and in further view of Jack ("Video Demystified, Second Edition").

57. In regards to claim 3, the combination of Hino and Wicker discloses the method of claim 1, as contained hereinabove. While the combination clearly discloses the gamma transform, the combination does not specifically disclose wherein the gamma transformation is applied before the color intensity is modified. Jack discloses the commonality of performing gamma correction prior to conversion from a first color space to a second color space such as disclosed in claim 1 (pp 39-61). In addition, it is very

common in the art to use gamma transformed data for the color conversion. It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino, Wicker, and Jack to achieve a system and method wherein data is gamma transformed prior to subsequent processing in order to linearize the intensity output of the CRT and reduce transmission-induced noise.

58. In regards to claim 6, the combination of Hino and Wicker discloses the method of claim 1, as disclosed hereinabove. While the combination clearly discloses the first color space as RGB, the combination does not specifically disclose wherein the second color space comprises a hue-saturation-intensity (HSI) color space. Jack discloses the conversion equations to transform any first color space, such as the RGB color space, into a second color space, such as the HSI color space (pp 39-61). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino, Wicker, and Jack to achieve a system and method wherein a first color space, such as an RGB color space, is converted into a second color space, such as HSI, in order to operate in a color space designed to more approximate the way humans perceive and interpret color.

59. In regards to claim 7, the combination of Hino and Wicker discloses the method of claim 1, as disclosed hereinabove. While the combination clearly discloses the use of two common color spaces, the combination does not specifically disclose wherein the first color space comprises a YUV color space and the second color space comprises a hue-saturation-intensity (HSI) color space. Jack discloses the conversion equations to transform any first color space, such as the YUV color space, into a second color space,

such as the HSI color space (pp 39-61). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino, Wicker, and Jack to achieve a system and method wherein a first color space, such as an YUV color space, is converted into a second color space, such as HSI, in order to operate in a color space designed to more approximate the way humans perceive and interpret color.

60. In regards to claim 15, the combination of Hino and Wicker discloses the apparatus of claim 13, as contained hereinabove. While the combination clearly discloses the gamma transform, the combination does not specifically disclose wherein the gamma transformation is applied before the color intensity is modified. Jack discloses the commonality of performing gamma correction prior to conversion from a first color space to a second color space such as disclosed in claim 1 (pp 39-61). In addition, it is very common in the art to use gamma transformed data for the color conversion. It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino, Wicker, and Jack to achieve a system and method wherein data is gamma transformed prior to subsequent processing in order to linearize the intensity output of the CRT and reduce transmission-induced noise.

61. In regards to claim 21, the combination of Hino and Wicker discloses the apparatus of claim 13, as disclosed hereinabove. While the combination clearly discloses the first color space as RGB, the combination does not specifically disclose wherein the second color space comprises a hue-saturation-intensity (HSI) color space.

Jack discloses the conversion equations to transform any first color space, such as the RGB color space, into a second color space, such as the HSI color space (pp 39-61). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino, Wicker, and Jack to achieve a system and method wherein a first color space, such as an RGB color space, is converted into a second color space, such as HSI, in order to operate in a color space designed to more approximate the way humans perceive and interpret color.

62. In regards to claim 22, the combination of Hino and Wicker discloses the apparatus of claim 13, as disclosed hereinabove. While the combination clearly discloses the use of two common color spaces, the combination does not specifically disclose wherein the first color space comprises a YUV color space and the second color space comprises a hue-saturation-intensity (HSI) color space. Jack discloses the conversion equations to transform any first color space, such as the YUV color space, into a second color space, such as the HSI color space (pp 39-61). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino, Wicker, and Jack to achieve a system and method wherein a first color space, such as an YUV color space, is converted into a second color space, such as HSI, in order to operate in a color space designed to more approximate the way humans perceive and interpret color.

63. In regards to claim 30, the combination of Hino and Wicker discloses the article of claim 28, as contained hereinabove. While the combination clearly discloses the gamma transform, the combination does not specifically disclose wherein the gamma

transformation is applied before the color intensity is modified. Jack discloses the commonality of performing gamma correction prior to conversion from a first color space to a second color space such as disclosed in claim 1 (pp 39-61). In addition, it is very common in the art to use gamma transformed data for the color conversion. It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino, Wicker, and Jack to achieve a system and method wherein data is gamma transformed prior to subsequent processing in order to linearize the intensity output of the CRT and reduce transmission-induced noise.

64. In regards to claim 33, the combination of Hino and Wicker discloses the article of claim 28, as disclosed hereinabove. While the combination clearly discloses the first color space as RGB, the combination does not specifically disclose wherein the second color space comprises a hue-saturation-intensity (HSI) color space. Jack discloses the conversion equations to transform any first color space, such as the RGB color space, into a second color space, such as the HSI color space (pp 39-61). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino, Wicker, and Jack to achieve a system and method wherein a first color space, such as an RGB color space, is converted into a second color space, such as HSI, in order to operate in a color space designed to more approximate the way humans perceive and interpret color.

65. In regards to claim 34, the combination of Hino and Wicker discloses the article of claim 28, as disclosed hereinabove. While the combination clearly discloses the use of two common color spaces, the combination does not specifically disclose wherein the

first color space comprises a YUV color space and the second color space comprises a hue-saturation-intensity (HSI) color space. Jack discloses the conversion equations to transform any first color space, such as the YUV color space, into a second color space, such as the HSI color space (pp 39-61). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino, Wicker, and Jack to achieve a system and method wherein a first color space, such as an YUV color space, is converted into a second color space, such as HSI, in order to operate in a color space designed to more approximate the way humans perceive and interpret color.

66. In regards to claim 42, the combination of Hino and Wicker discloses the system of claim 40, as contained hereinabove. While the combination clearly discloses the gamma transform, the combination does not specifically disclose wherein the gamma transformation is applied before the color intensity is modified. Jack discloses the commonality of performing gamma correction prior to conversion from a first color space to a second color space such as disclosed in claim 1 (pp 39-61). In addition, it is very common in the art to use gamma transformed data for the color conversion. It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino, Wicker, and Jack to achieve a system and method wherein data is gamma transformed prior to subsequent processing in order to linearize the intensity output of the CRT and reduce transmission-induced noise.

67. In regards to claim 47, the combination of Hino and Wicker discloses the system of claim 40, as disclosed hereinabove. While the combination clearly discloses the first

color space as RGB, the combination does not specifically disclose wherein the second color space comprises a hue-saturation-intensity (HSI) color space. Jack discloses the conversion equations to transform any first color space, such as the RGB color space, into a second color space, such as the HSI color space (pp 39-61). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino, Wicker, and Jack to achieve a system and method wherein a first color space, such as an RGB color space, is converted into a second color space, such as HSI, in order to operate in a color space designed to more approximate the way humans perceive and interpret color.

68. In regards to claim 48, the combination of Hino and Wicker discloses the system of claim 40, as disclosed hereinabove. While the combination clearly discloses the use of two common color spaces, the combination does not specifically disclose wherein the first color space comprises a YUV color space and the second color space comprises a hue-saturation-intensity (HSI) color space. Jack discloses the conversion equations to transform any first color space, such as the YUV color space, into a second color space, such as the HSI color space (pp 39-61). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Hino, Wicker, and Jack to achieve a system and method wherein a first color space, such as an YUV color space, is converted into a second color space, such as HSI, in order to operate in a color space designed to more approximate the way humans perceive and interpret color.

Conclusion

69. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alysa N. Brautigam whose telephone number is 571-272-7780. The examiner can normally be reached on 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

anb

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